

Lotus corniculatus
Birdsfoot trefoil
Fabaceae

Lotus corniculatus (birdsfoot trefoil) is a perennial shrub introduced from Eurasia, which exhibits both rhizomatous and non-rhizomatous growth. An important forage legume, *L. corniculatus* can tolerate wide ranges in soil pH (Kallenbach et al., 1996) and poor soil drainage. In a comparison of six *Lotus* genotypes, *L. corniculatus* germinated under the widest temperature and soil moisture regimes (Blumenthal et al., 1996), with its base temperature for emergence at 3°C under the driest conditions (-0.6 Mpa). Their results suggest that *L. corniculatus* may germinate in late fall and winter in the field. Birdsfoot trefoil is considered to have less vigor than other perennial forages, however (Twamley et al., 1997).

Borowicz (1993) found that colonization by vesicular-arbuscular mycorrhizal fungi is important for the growth of *L. corniculatus*. This author also found that herbivory (simulated by clipping) does not have a long-lasting effect on *L. corniculatus*, presumably because young plants are able to compensate by reallocating resources efficiently. She did find, however, that interspecific competition had persistent effects on *L. corniculatus* (e.g., decreasing host plant investment in *Rhizobium*). There appear to be no published data on total amounts of nitrogen fixed by populations of birdsfoot trefoil, so ecosystem and community effects of nitrogen fixation cannot be estimated. However, the fact that birdsfoot trefoil is an important forage legume in Canada and parts of the US supports the assumption that *L. corniculatus*, when grown in dense stands as a crop, has the capacity to increase available nitrogen in soil.

Rust (*Uromyces* sp.) was first reported in the US (in central Pennsylvania) in the late 1980's (Leath et al., 1993). Its potential to cause damage to *L. corniculatus* is not clear, however. In contrast, a specific wilt pathogen (*Fusarium oxysporum*) of birdsfoot trefoil was the principal cause of the demise of the certified birdsfoot trefoil seed industry in New York state (Bergstrom and Kalb, 1995). These authors found that none of the 14 cultivars of *L. corniculatus* available commercially in North America possessed a level of resistance adequate for performance in infested New York fields.

The herbicide imazethapyr has been shown to induce injury to *L. corniculatus* at the rate of 70-140 g ha⁻¹, 20 days after treatment (Wilson, 1994). However, the herbicide was more effective at reducing vigor in its competitors, resulting in much greater *L. corniculatus* biomass in treated versus untreated plots only 28 days after treatment.

Literature cited:

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